



INFORMATION SHEET

NO. S-02

DATE : December 18, 2013

CATEGORY : Structural

SUBJECT : **Suspended Ceilings**

PURPOSE : The purpose of this Information Sheet is to clarify requirements for suspended ceilings

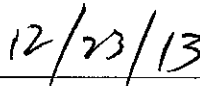
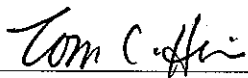
REFERENCE : 2013 California Building Code Section 808.1.1.1, Suspended acoustical ceilings and Section 1613, Earthquake Loads
ASCE 7-10 Section 13.4, Nonstructural Component Anchorage and Section 13.5, Architectural Components
ASTM C 635 and ASTM C 636
ASTM E580, Section 5 – Seismic Design Categories D, E, and F
CISCA Seismic Zone 3&4 (Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings)

DISCUSSION :

1. Suspended ceilings weighing not greater than 4 pounds per square feet can be supported by wires with powder driven fasteners.
Other suspended ceilings shall be evaluated by Architect or Engineer in accordance to above reference.
2. Per ASCE 7-10 Section 13.5.6.2.2, suspended ceilings shall be designed and installed in accordance ASTM C635, ASTM C636, and ASTM E580, Section 5 – Seismic Design Categories D, E, and F as modified by the following:
 - Heavy duty T-bar grid system
 - Minimum 2" wide perimeter supporting closure angle (all sides)
 - Attach ceiling grid at one end of each orthogonal horizontal direction to closure angle
 - Other ends in each orthogonal horizontal direction are free to slide resting on the closure angle and with a 3/4" clearance from the wall
 - For ceilings exceeding 1,000 sq ft provide horizontal restraint of the ceiling to the structural system shall be provided. Horizontal restraint tributary areas shall be approximately equal. Rigid braces are permitted in lieu of diagonal splay wires. (See Section 13.5.6.2.2 for additional bracing requirements)
 - For ceilings exceeding 2,500 sq ft provide seismic separation joint or full height partitions to reduce areas to less than 2,500 sq ft (See Section 13.5.6.2.2b for structural analyses alternative in lieu of this requirements)

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- For ceilings without rigid bracing provide 2" oversized trim rings for sprinklers and other penetrations to accommodate 1" free movement in all horizontal directions. (See Section 13.5.6.3 for alternative designs)
 - Changes in ceiling plane shall be provided with positive bracing
 - Cable trays and electrical conduits shall be independently supported and braced
3. Suspended ceilings are not subject to special inspection, since 2013 CBC Section 1613 excludes ASCE 7 Chapter 14 and Appendix 11A (which contains the special inspection requirements).



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Date

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